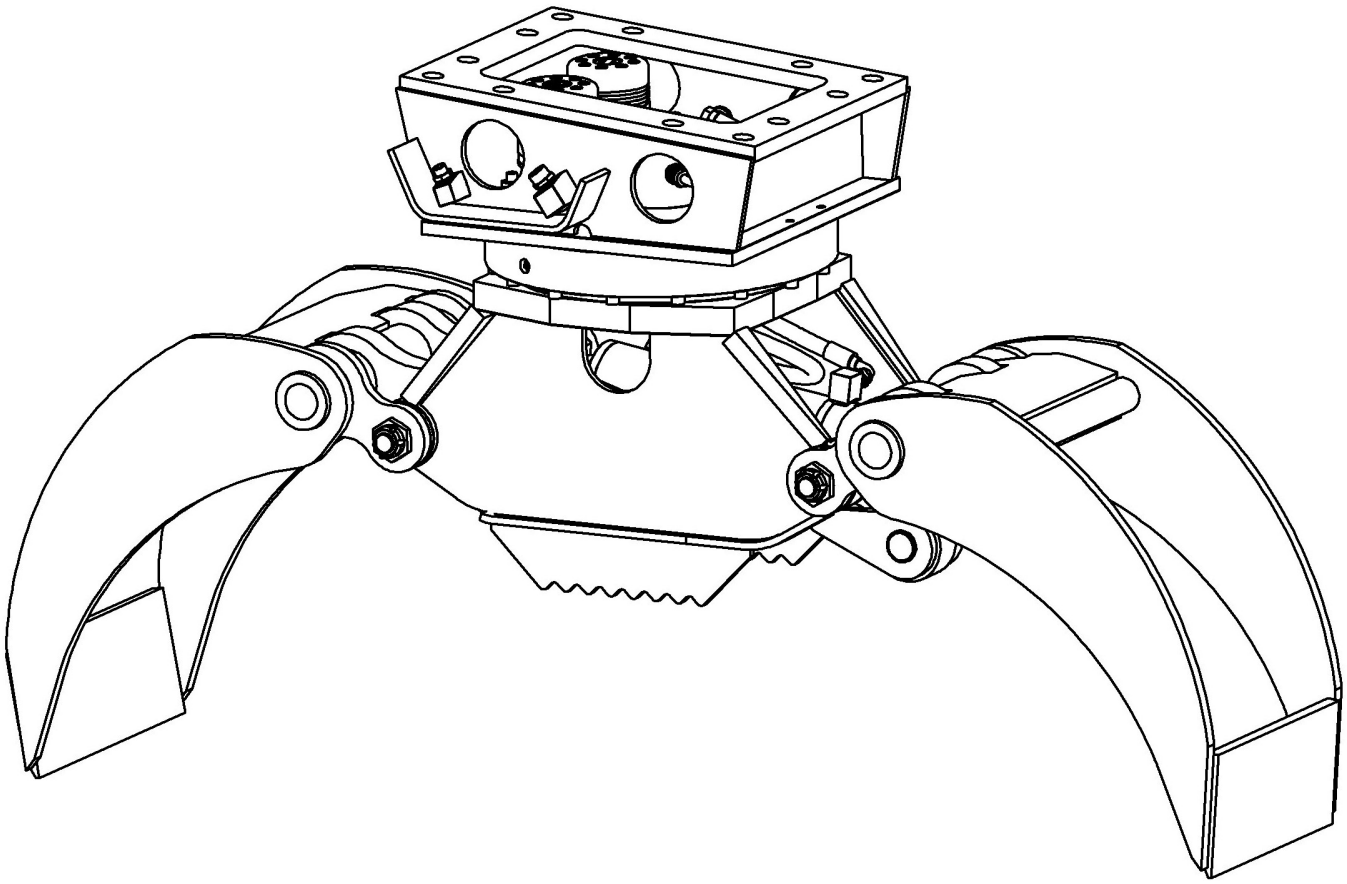
CE Operating and Maintenance Manual



Tree Grab

Type S 600-B

Zijtveld Grijpers®
The Netherlands
www.zijtveld-grijpers.nl

Introduction

Dear User,

The Tree grab is a piece of equipment for excavators. The Tree grab is available in various weights, capacities and versions and is always a fast and purpose-built selector and demolition device.

It is imperative you read this manual and follow all the instructions given when working with our machinery in accordance with our recommendations.

The Tree grabs are provided with a CE marking, thereby complying with all the necessary European regulatory safety regulations.

It is essential to follow the safety regulations at all times.

These safety regulations refer to those laid out in this manual, including both the operating instructions for excavators and the safety regulations that apply to the vicinity in which the Tree grab product is being used, maintained and repaired.

Modifications made to the Tree Grab may only be implemented with the written consent of the manufacturer. Only under these circumstances do the warranty conditions and CE liabilities remain applicable.

Warning

- The excavator with a Tree Grab may only be operated by a qualified person.
- Maintenance and/or repairs may only be carried out by appropriately trained and competent personnel.
- Prevent dangerous work situations. Stay at a safe distance from moving parts.
- Ensure that whilst operating the machinery no other people are within the working vicinity of the excavator with tree grab.
- Maintenance or repair work must only be carried out when the engine is turned off.
- Refer to the safety regulations before starting on any maintenance or repair work.
- Replace defective parts only with original parts from the manufacturer.
- Failure to replace defective parts with original parts from the manufacturer will result in cessation of the entire warranty and CE liability.

Index

Content	Page
EU declaration of compliance	4
Safety regulations	5
Conditions of guarantee	7
Operation	8
Daily maintenance	9
Lubrication schedule	10
Exploded view Total	11
Part list Total 1	12
Part list Total 2	13
Partslist + exploded view Cylinder	14
Partslist + exploded view C.O.D.	15
Tightening Torques	16
Technical Specifications	17

® Zijtveld Grijpers is a registered brand name of Zijtveld Grijpers BV in 's- Graveland in the Netherlands. None of the content of this publication may be copied elsewhere without the express permission of Zijtveld Grijpers BV. The manufacturer reserves the right to make alterations or modifications to products and literature at any time.

CE

EU declaration of compliance for machines (Guideline 2006/42/EC)

Manufacturer	Zijtveld Grijpers B.V.
Address	De Boomgaard 1
	‘s Graveland
	The Netherlands

Hereby declares that Zijtveld Grijper®

Type	S600B
Serial number	

meets all the required machine guidelines (Guideline 2006/42/EC, as most recently updated) as well as national legislative implementation of this directive.

Attention: Any adjustment that is made to this product without written consent on the manufacturer, makes this declaration void and invalid.

We should draw your attention to the fact that the selector grab product is designed to be assembled with another machine, and that the product, on the grounds of the machine Guide Line, can only be used once the whole machine is in accordance to the conditions laid down by European regulations.

Signed at ‘s Graveland,

Date

.....

(signed)

Safety Regulations

The Tree Grab should always be attached to an excavator of the correct weight, class and capacity of machine. Refer to the data information plate on the grab and consult the technical specifications in this manual. When in doubt contact the supplier.

The weight of the grab, increased by the weight of the load being picked up, must never exceed the maximum allowance of lifting power. For further information consult the excavator manual.

It is prohibited for people to be within the rotation range of the machine and grab. Keep in mind that material being lifted that extrude from the grab will enlarge the rotation range.

It is always possible that material can fall out of the excavator's grab. For this reason, never rotate the machinery above people, machines nor vehicles.

Always pick up a long load at its centre of gravity, to prevent the excavator from either rotating or tipping over. It is not permissible to use the grab to hit or pound.

Whilst connecting or disconnecting, lubricating or other maintenance work, the grab must be stable and on a flat surface. Before performing lubricating or other maintenance work the engine should always be shut down.

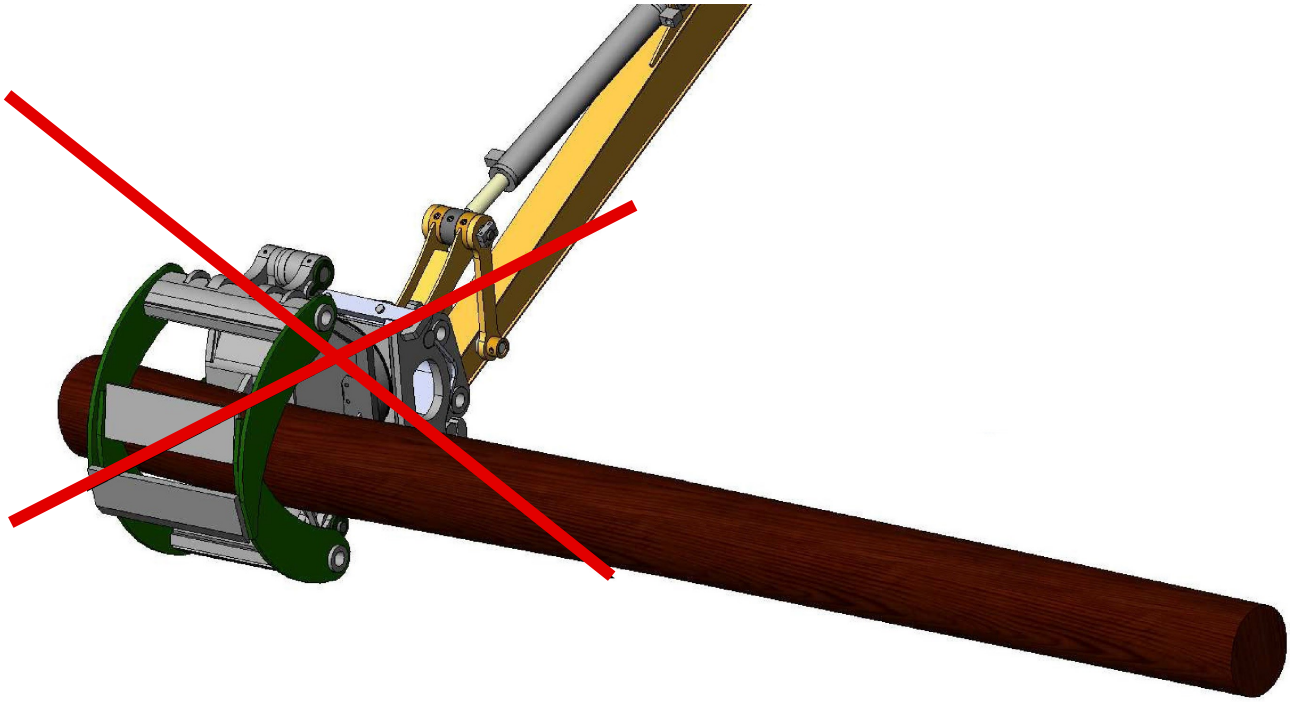
Warning

Never work on the hydraulic system if the system is still under pressure! Keep hands away from moving parts at all times.

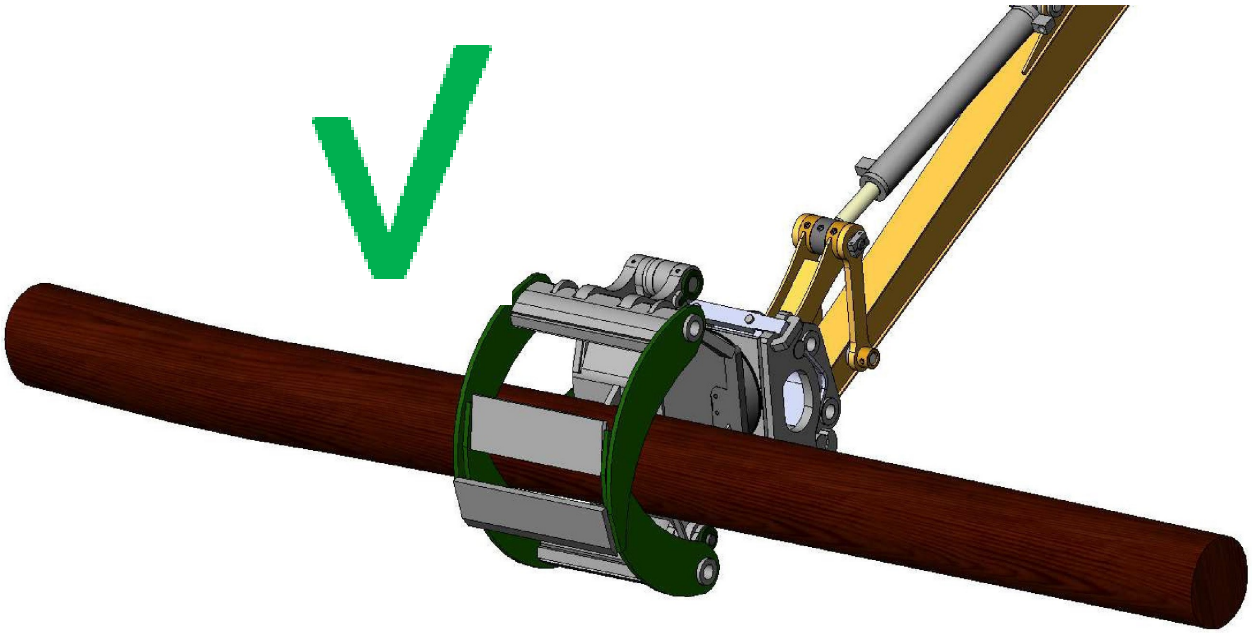
The manufacturer cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication are, therefore, not all-inclusive. If a tool, procedure, work method or operating technique that is not specifically recommended by the manufacturer is used, then you must assure yourself that it is safe for you and others.

You should also ensure that the product will not be damaged or made unsafe by the operation, lubrication, maintenance or repair procedures that you choose.

Warning



Warning: To avoid danger lift a long load only in the center of cravity.



Terms of Guarantee

The manufacturer provides a warranty of 12 months from the date of delivery.

All defective parts proven to be caused by faults in either manufacture, production or material are covered by the warranty.

Defective parts that are replaced and fall under guarantee become property of the manufacturer. They must be kept available and returned immediately, in complete and unaltered condition, upon the first request from the manufacturer.

Any claim made under guarantee will only be taken into consideration once a written appeal is made to the dealer or manufacturer. This must be done directly after the damage or fault occurs and at least within 24 hours of any irregularities and problems arising.

All claims under conditions of the warranty must contain the following data; the type of machine the product has been mounted on, the serial number of the grab, the record of the defective part(s) and a description of the fault, photographs, copy of the delivery papers and invoice and a copy of the invoice of the piece of equipment concerned.

Minor repairs can be carried out in consultation with the dealer; the necessary parts which fall under the warrantee, will be delivered without charge. For larger repairs the grab should be sent to your dealer or manufacturer for repairs or modifications. The work and necessary parts are free of charge. However, transport costs and call-out charges to and from your dealer or manufacturer are not covered.

The manufacturer is not liable for consequential loss caused by a defective Tree Grab (consequential loss to excavators, consequential loss due to a stationary excavator or the suspending of work activity).

Excluded from Guarantee:

- Damage caused by faulty assembly of a machine and or the hydraulic system, improper maintenance without expertise and transport damage.
- Defects resulting from improper repairs and/or maintenance including that carried out by an unauthorised third party.
- Defects arising from neglect or improper execution of preventive maintenance procedures e.g. regular lubrication or greasing.
- Defects to parts which are subject to normal wear like blades.
- Consequential loss caused by failure to replace normal wearing parts in time

N.B. If defective or worn down parts are replaced by non-original parts, the entire warranty and liability will cease to apply.

Procedures to follow before initial use

Before taking the machine into operation and to ensure the good functioning of the apparatus, it is important that the following points are checked and correspond to the technical specifications as shown on the information plate and in the manual.

- The type and weight of the tree grab must conform to weight and machine class of the intended excavator.
- The oil flow and the pressure for rotating the tree grab should be checked and adjusted.
- Beware: the return pressure of the rotating oil at a continuous level may be at a maximum of 25 bar, and only briefly (maximum of 10% of the working time) at 100 bar.
- The oil flow and pressure of the pinching (opening and closing) of the tree grab needs to be controlled and adjusted.
- Check if the hydraulic quick release hitch is in good order and screwed on firmly.
- Check if the ball valves and valves are in the correct position
- Check if the connecting pins between the excavator and the tree grab are well secured, as well as the wedge and the security pin of the quick release hitch system.
- Ensures that the hoses have the correct length and are at no risk of interfering with any of the moving parts. Also make sure they cannot wear or damage because of contact with the grab or material that is moved by the grab.

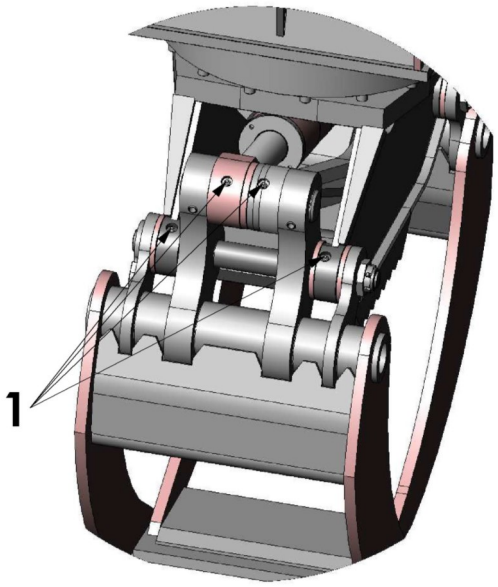
Daily Maintenance

For maintenance work, always place the grab in open position on a flat and stable surface and ensure the excavator cannot move.

During maintenance on the hydraulic system the hydraulic hoses need to be disconnected. Before disconnecting ensure there is no pressure on the hoses. Consult the manual for the excavator.

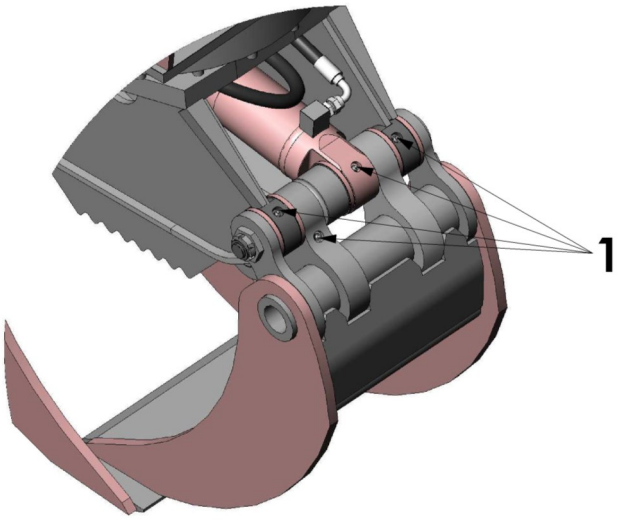
The grab must be lubricated once every 8 operating hours with the same lubricant recommended for the excavator. For the position of the grease nipples and frequency of lubrication, see the schedule on page 10.

Lubrication Schedule



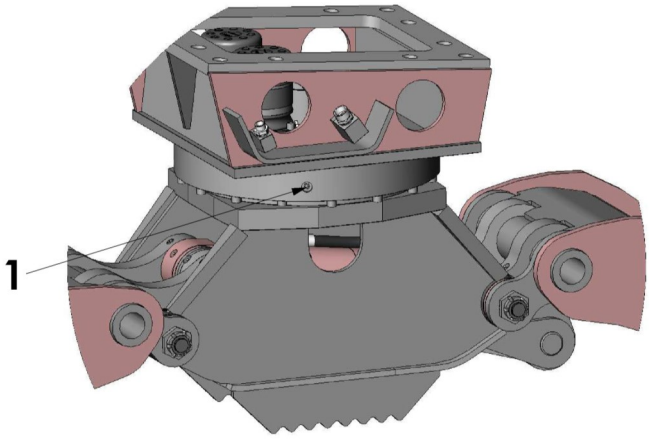
Picture 3: Lubricating cylinder bearing

1 = Lubricate 1 x per 8 operating hours.



Picture 4: Lubricating pivoting points

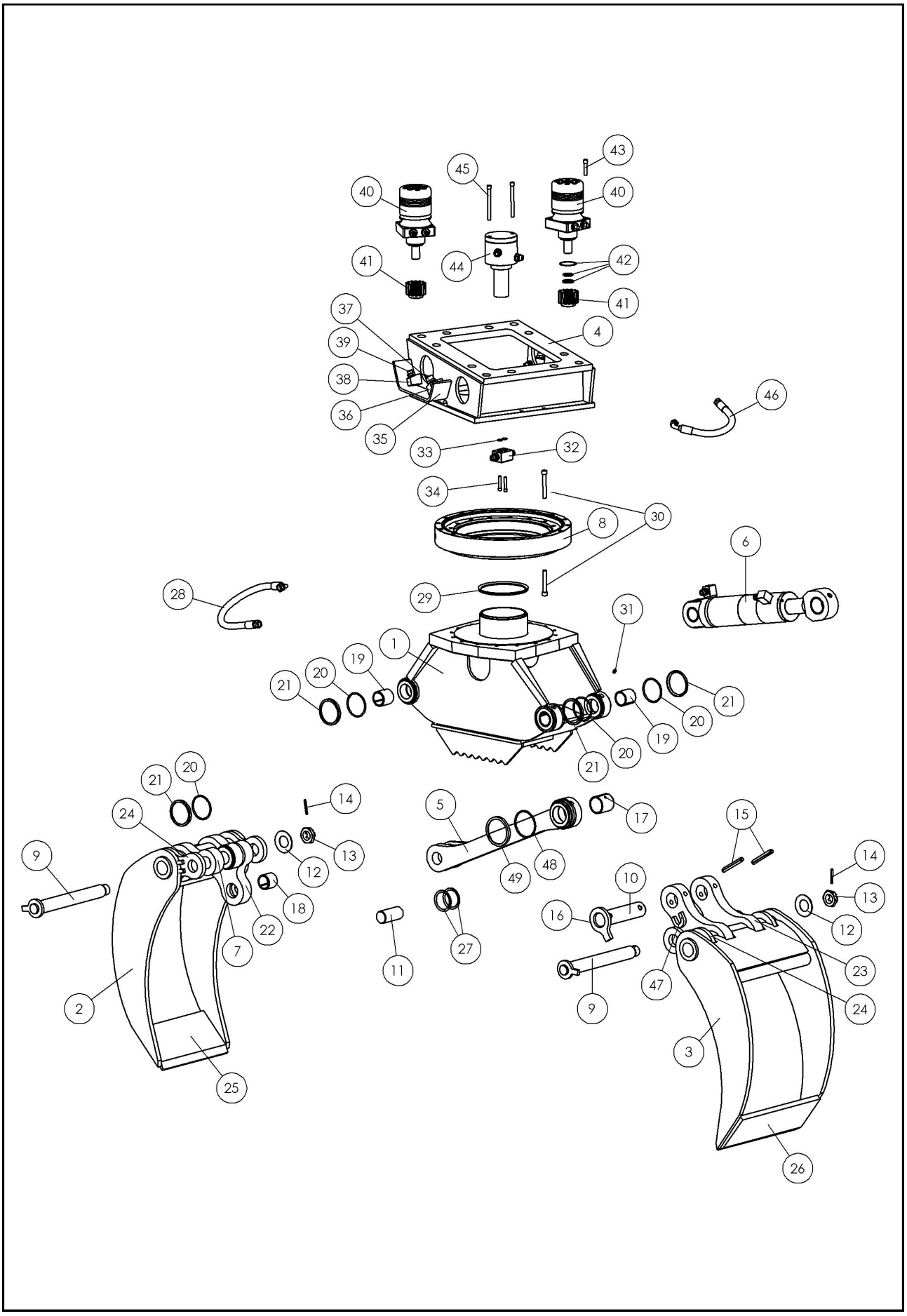
1 = Lubricate 1 x per 8 operating hours.



Picture 5: Lubricating rotator

1 = Lubricate 1 x per 8 operating hours.

Exploded View S602B-TOTAL



Partslist S602B–TOTAL

Part nbr.	Qty	Description	Order part nbr.
1	1	Welded main frame construction	S602B.001
2	1	Shell left (Short lever / small bucket)	S602B.002
3	1	Shell right (Long lever / wide bucket)	S602B.003
4	1	Welded rotator frame construction	S602B.004
5	1	Welded linkage construction	S602B.005
6	1	Hydraulic cylinder	S602B.006
7	4	Lever support 50mm	S602B.007
8	1	Slewing ring	S602B.008
9	2	Main hinge pin	S602B.009
10	1	Linkage axis Ø60mm (top / long)	S602B.010
11	1	Linkage axis Ø50mm (under / short)	S602B.011
12	2	Disk spring	S602B.012
13	2	Castellated nut M42	S602B.013
14	2	Spline pin 8 mm x 60 (secure on M42)	S602B.014
15	2	Locking pin 16 mm	S602B.015
16	1	Linkage axis (top) Ø 60mm	S602B.016
17	1	Bearing Linkage	S602B.017
18	1	Bearings shell hinge short	S602B.018
19	4	Bearings main frame	S602B.019
20	9	O-ring Metal Seal	S602B.020
21	9	Metal Seal Ø106mm	S602B.021
22	1	Shell hinge short	S602B.022
23	2	Shell hinge long	S602B.023
24	3	Shell hinge support	S602B.024
25	1	Fixed blade left bucket (small)	S602B.025
26	1	Fixed balde right bucket (wide)	S602B.026
27	1 set	Seal (2 pieces)	S602B.027
28	1 set	Hose Set Lower frame (2 pieces)	S602B.028
29	1	V-ring (central ring)	S602B.029

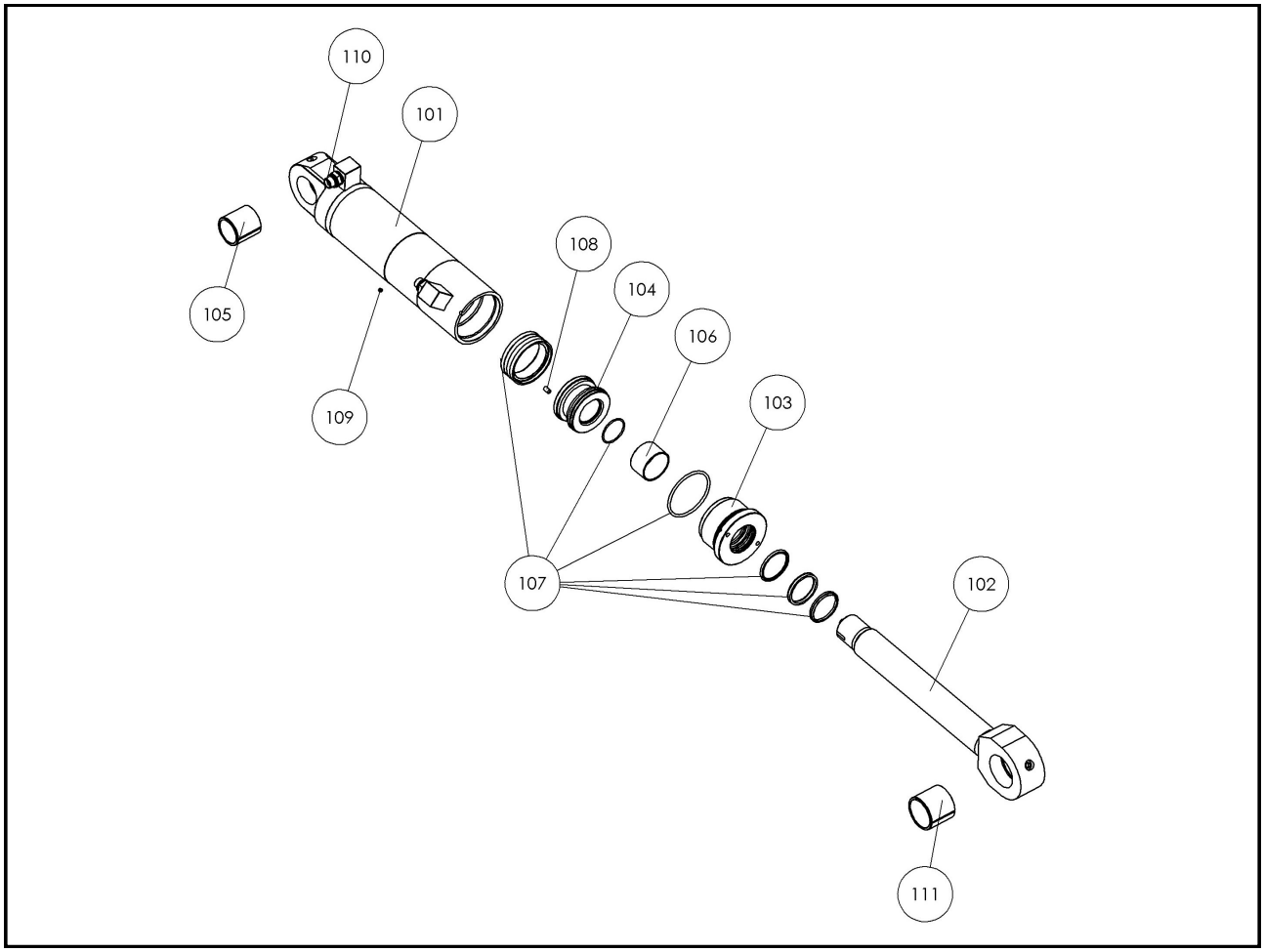
Partslist S602B–TOTAL

Part nbr.	Qty	Description	Order partn br.
30	1 set	Allen screw / nut (16 / 16 pieces)	S602B.030
31	1 set	Lubrication nipple 1/8”G (13 pieces)	S602B.031
32	1	Connector block Ø 60 mm (50x40x70mm)	S602B.032
33	1 set	0-ring connector block c.o.d. Ø 60mm (2 pcs.)	S602B.033
34	1 set	Allenscrew COD Connector block (2 pieces)	S602B.034
35	2	Protective cover (connection nipples)	S602B.035
36	2	Main-connect block (closing/open) function 3/4"G	S602B.036
37	2	Main-connect nipple (closing/open function)	S602B.037
38	2	Main-connect block (rotation function) 1/2"G	S602B.038
39	2	Main-connect nipple (rotation function)	S602B.039
40	2	Hydro-valve	S602B.040
41	2	Gear	S602B.041
42	1 set	Seal kit to Hydraulic motor (for 1 motor)	S602B.042
43	1 set	Allen Screw / ring (8 pieces)	S602B.043
44	1	C.o.d. Complete	S602B.044
45	1 set	Allen screw C.o.d. (2 pcs)	S602B.045
46	1 set	Hose kit set head (6 pcs)	S602B.046
47	1	Locker-U	S602B.047
48	1	0-ring metal seal	S602B.048
49	1	Metal seal (Ø 120 mm)	S602B.049

Partslist Cylinder S602B

Part nbr.	Qty	Description	Order part nbr.
101	1	Cylinder housing	S602B.101
102	1	Piston Rod	S602B.102
103	1	Cylinder Head	S602B.103
104	1	Piston	S602B.104
105	1	Bearing Cylinder Housing	S602B.105
106	1	Plain Bearing cylinder nut	S602B.106
107	1set	Cylinder seal-kit	S602B.107
108	1	Secure bolt M8 x12	S602B.108
109	1	Secure bolt M6 x 6	S602B.109
110	1set	Cylinder nipple-set (2 pcs.)	S602B.110
111	1	Bearing Cylinder Piston	S602B.111

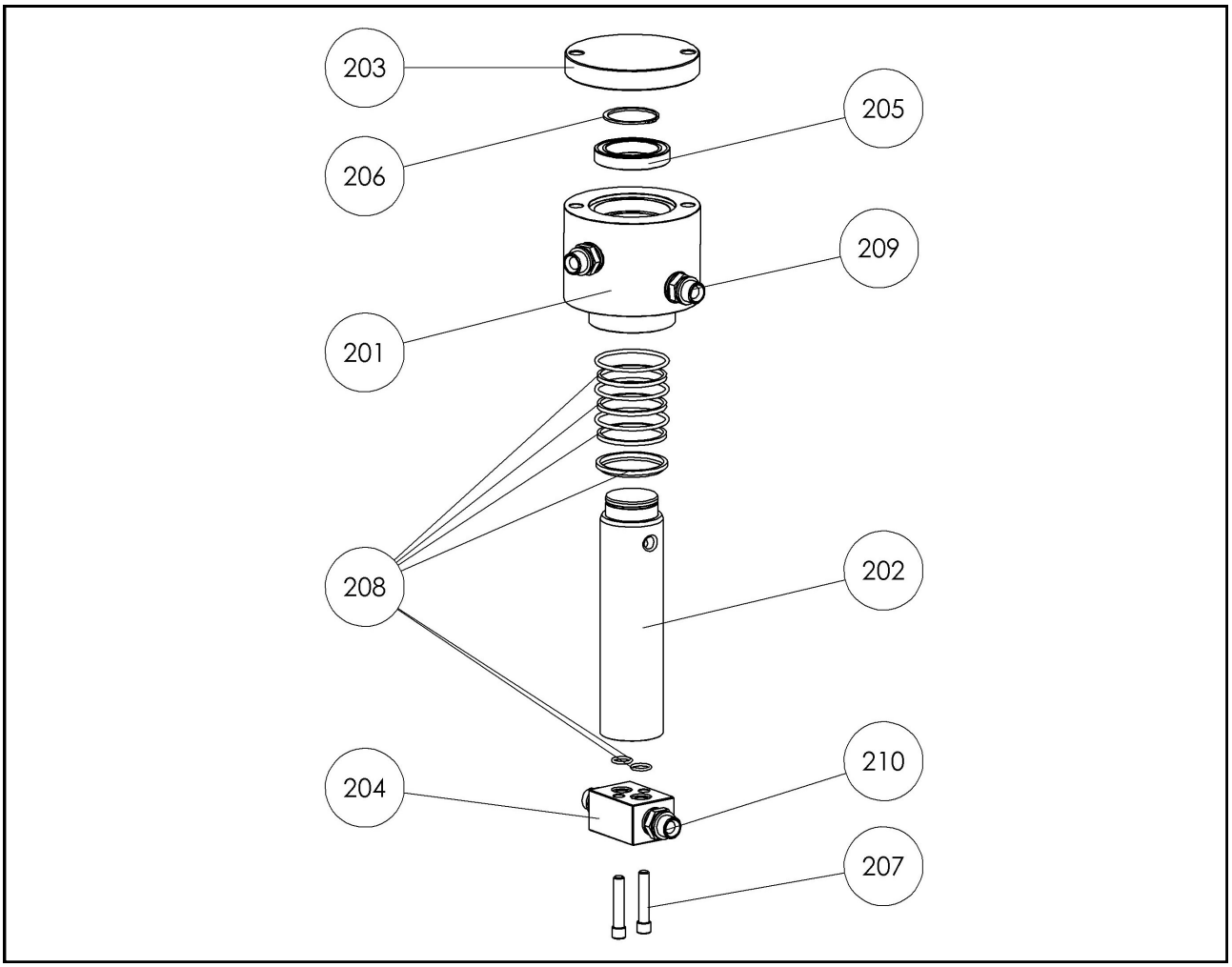
Exploded view Cylinder S602B



Partslist C.O.D. S602B

Part nbr.	Qty	Description	Order part nbr.
201	1	C.o.d. housing	S602B.201
202	1	C.o.d. rotor Ø 60mm	S602B.202
203	1	C.o.d. cover	S602B.203
204	1	Connection Block C.o.d. Ø 60mm (50x40x70mm)	S602B.204
205	1	Bearing	S602B.205
206	1	Seeger circlip ring	S602B.206
207	1set	Allen screw kit (2 pcs)	S602B.207
208	1set	Rotor Seal kit c.o.d. Ø60mm	S602B.208
209	1set	Connection nipples c.o.d. housing (2 pcs)	S602B.209
210	1set	Connection nipples c.o.d. connection block (2 pcs)	S602B.210

Exploded view C.O.D. S602B



Torques Specification

Maximum torque specified to bolts on the blades and rotator of the Zijtveld Tree grab.

Please consult this listing on diameter, pitch and metric size and maximum torque specified prior to fastening.

Bolt size	Torque (Nm)	Torque (Kg/m)	
	Bolt 10,9	Bolt 10,9	
M8	40 Nm	4 Kgm	
M10	80 Nm	8 Kgm	
M12	130 Nm	13 Kgm	
M12x1,25	110 Nm	11 Kgm	Note ,fine pitch.
M14	200 Nm	20 Kgm	
M16	300 Nm	30 Kgm	
M20	600 Nm	60 Kgm	
M24	1000 Nm	100 Kgm	
M27	1500 Nm	150 Kgm	
M30	2000 Nm	200 Kgm	
M36	3600 Nm	360 Kgm	
M39	4600 Nm	460 Kgm	

Technical specifications : Zijtveld Tree grabs

		150B	*400B*	*450B-5T*	*452B*	*600B-9T*	*600B*	*902B*	*1202B*	*2700B*
Class excavator	tons	1,5 – 4	4 – 8	4 – 9	7 – 11	10 – 16	10 – 16	14 – 20	18 – 30	30 – 50
Weight	kg	145	350	420	470	900	800	960	1500	2850
Operating Pressure Max.	bar	300	300	300	300	350	350	350	350	350
Operating Pressure Min.	bar	170	140	140	140	190	190	190	190	190
Pressure Rotation max.	bar	210	210	210	210	210	210	210	210	210
Oil flow max.	l/min.	30	40	40	40	100	100	120	170	250
Oil flow Rotation max.	l/min.	10	12	12	12	25	25	25	35	40
Width	mm	450	530	750	750	600	600	750	900	1200
Spread openend	mm	1100	1600	1600	1600	2000	2000	2000	2300	2900
Height	mm	700	900	900	900	1300	1300	1400	1450	1900
Content	ltr.	Ø50	Ø50	Ø50	Ø60	Ø100	Ø150	Ø150	Ø200	Ø230
Closing Force	kn	10	20	20	2020	35	35	40	60	80

Specifications subject to change